

What is claimed is:

1. A photoresist supply apparatus comprising:
a photoresist bottle for containing a photoresist;

5 a trap tank for storing the photoresist supplied from the photoresist bottle via a first
photoresist supply line;

a lower photoresist sensor and an upper photoresist sensor respectively installed near
a bottom and a top of the trap tank to detect the photoresist in the trap tank;

10 a drain line connected to an upper side of the trap tank to release air;

a photoresist-blocking valve installed at the drain line, the photoresist-blocking valve
structured to be opened to release air or closed to prevent a photoresist loss according to
signals detected by the lower photoresist sensor and the upper photoresist sensor; and

15 a photoresist pump for dispensing, onto a wafer, the photoresist supplied through a
second photoresist supply line connected to a lower side of the trap tank.

15 2. The photoresist supply apparatus according to claim 1, further comprising a
bottle change valve installed at the second photoresist supply line connected to the lower side
of the trap tank.

20 3. The photoresist supply apparatus according to claim 1, further comprising a
nitrogen supply line connected to the photoresist bottle,
wherein nitrogen is supplied into the photoresist bottle through the nitrogen supply
line to pressurize the photoresist in the photoresist bottle, and a button valve is installed at the
nitrogen supply line to control nitrogen supply.

25 4. The photoresist supply apparatus according to claim 1, wherein when the
lower photoresist sensor is in an ON state and the upper photoresist sensor is in an ON or
OFF state, the photoresist-blocking valve is closed.

30 5. The photoresist supply apparatus according to claim 1, wherein when the
lower photoresist sensor is in an OFF state and the upper photoresist sensor is in an OFF
state, the photoresist-blocking valve is opened.

6. The photoresist supply apparatus according to claim 1, wherein while the
photoresist of the trap tank is consumed and photoresist supply into the trap tank is carried

out, when the lower photoresist sensor is in an ON state and the upper photoresist sensor is in an OFF state, the photoresist-blocking valve is opened.

7. The photoresist supply apparatus according to claim 1, wherein while the
5 photoresist of the trap tank is consumed and photoresist supply into the trap tank is carried
out, when the lower photoresist sensor is in an ON state and the upper photoresist sensor is in
an ON state, the photoresist-blocking valve is closed.

8. The photoresist supply apparatus according to claim 1, wherein when
10 sensitivity of the lower photoresist sensor or the upper photoresist sensor is decreased and
one of the lower photoresist sensor and the upper photoresist sensor is in an ON state, the
photoresist-blocking valve is closed after a predetermined period.

9. A photoresist supply apparatus comprising:
15 a first photoresist bottle for containing a first photoresist;
a first trap tank for storing the first photoresist supplied from the first photoresist
bottle via a first photoresist supply line;
a first lower photoresist sensor and a first upper photoresist sensor respectively
installed near the bottom and the top of the first trap tank to detect the first photoresist in the
20 first trap tank;
a first drain line connected to an upper side of the first trap tank to release air;
a first photoresist-blocking valve installed at the first drain line, the first photoresist-
blocking valve structured to be opened to release air or being closed to prevent photoresist
loss according to signals detected by the first lower photoresist sensor and the first upper
25 photoresist sensor;
a second photoresist bottle for containing a second photoresist;
a second trap tank for storing the second photoresist supplied from the second
photoresist bottle via a third photoresist supply line;
a second lower photoresist sensor and a second upper photoresist sensor respectively
30 installed near the bottom and the top of the second trap tank to detect the second photoresist
in the second trap tank;
a second drain line connected to an upper side of the second trap tank to release air;
a second photoresist-blocking valve installed at the second drain line, the second
photoresist-blocking valve structured to be opened to release air or being closed to prevent

photoresist loss according to signals detected by the second lower photoresist sensor and the second upper photoresist sensor; and

5 a photoresist pump for dispensing, onto a wafer, one of the first photoresist and the second photoresist supplied through a second photoresist supply line and a fourth photoresist supply line connected to a lower side of the first trap tank and a lower side of the second trap tank, respectively.

10. The photoresist supply apparatus according to claim 9, further comprising a bottle change valve commonly installed at the second photoresist supply line and the fourth photoresist supply line,

wherein the bottle change valve allows the photoresist pump to be connected to the second photoresist supply line or the fourth photoresist supply line according to signals detected by the first lower photoresist sensor and the second lower photoresist sensor.

15 11. The photoresist supply apparatus according to claim 10, wherein while the photoresist pump is connected to the second photoresist supply line through the bottle change valve, when the first lower photoresist sensor is in an ON state and the first upper photoresist sensor is in an ON or OFF state, the first photoresist-blocking valve is closed.

20 11. The photoresist supply apparatus according to claim 10, wherein while the photoresist pump is connected to the second photoresist supply line through the bottle change valve, when the first lower photoresist sensor is in an OFF state and the first upper photoresist sensor is in an OFF state, the first photoresist-blocking valve is opened.

25 12. The photoresist supply apparatus according to claim 10, wherein while the first photoresist of the first trap tank is consumed, the photoresist pump is connected to the fourth photoresist supply line through the bottle change valve, and supply of the second photoresist into the second trap tank is carried out, when the second lower photoresist sensor is in an ON state and the second upper photoresist sensor is in an OFF state, the second photoresist-blocking valve is opened.

30 14. The photoresist supply apparatus according to claim 10, wherein while the first photoresist of the first trap tank is consumed, the photoresist pump is connected to the fourth photoresist supply line through the bottle change valve, and supply of the second

photoresist into the second trap tank is carried out, when the second lower photoresist sensor is in an ON state and the second upper photoresist sensor is in an ON state, the second photoresist-blocking valve is closed.

5 15. The photoresist supply apparatus according to claim 9, wherein when sensitivity of the first lower photoresist sensor or the first upper photoresist sensor is decreased and one of the first lower photoresist sensor and the first upper photoresist sensor is in an ON state, the first photoresist-blocking valve is closed after a predetermined period.

10 16. The photoresist supply apparatus according to claim 9, wherein when sensitivity of the second lower photoresist sensor or the second upper photoresist sensor is decreased and one of the second lower photoresist sensor and the second upper photoresist sensor is in an ON state, the second photoresist-blocking valve is closed after a predetermined period.

15 17. The photoresist supply apparatus according to claim 9, further comprising a first nitrogen supply line and a second nitrogen supply line respectively connected to the first photoresist bottle and the second photoresist bottle,
wherein nitrogen is supplied into the first photoresist bottle and the second photoresist bottle through the first nitrogen supply line and the second nitrogen supply line to pressurize the first photoresist in the first photoresist bottle and the second photoresist in the second photoresist bottle, and a first button valve and a second button valve are respectively installed at the first nitrogen supply line and the second nitrogen supply line to control nitrogen supply.